WHAT IS CLAIMED IS:

1. A torque clutch apparatus comprising:

a shaft which is rotatably pivotably mounted and which has a screw thread formed on the circumferential surface thereof;

a first gear rotatably fitted to the shaft;

first and second sandwiching members fitted to the shaft so as to sandwich the first gear therebetween and to rotate integrally with the shaft;

a second gear rotatably screwed on the shaft; and

a spring arranged between the second gear and one of the first and second sandwiching members opposing the second gear.

2. A torque clutch apparatus according to Claim 1, further comprising first driving means for rotationally driving the first gear.

3. A torque clutch apparatus according to Claim 1, further comprising second driving means for rotationally driving the second gear relative to the shaft.

4. A torque clutch apparatus according to Claim 1, further comprising:

a third gear having a predetermined rotational load and being rotatably arranged so as to mesh the second gear; and

fixing means for fixing the first gear so that it does not rotate, the fixing means being switchable between the fixing and releasing the first gear.

5. A printer apparatus for printing images by pressing a head on a printing sheet via an ink ribbon, the printer apparatus comprising:

first torque-generating means for generating a variable load torque applied to a feed reel, which is rotatably supported, of ink ribbon;

second torque-generating means for variably generating a rotational torque to a winding reel, which is rotatably supported, of ink ribbon; and

controlling means for controlling the first and/or second torque-generating means so as to generate one of the load torque and rotational torque in accordance with the diameter of the roll of ink ribbon wound on the feed reel and/or the winding reel.

6. A printer apparatus according to Claim 5, wherein the first torque-generating means comprises:

a shaft which is rotatably pivotably mounted and which has a screw thread formed on the circumferential surface

thereof;

a first gear rotatably fitted to the shaft;

first and second sandwiching members fitted to the shaft so as to sandwich the first gear therebetween and to rotate integrally with the shaft;

a second gear rotatably screwed on the shaft; and

a spring arranged between the second gear and one of the first and second sandwiching members opposing the second gear; and

driving means for rotationally driving the second gear relative to the shaft, and

wherein the controlling means generates the load torque in the first torque-generating means in accordance with the diameter of the roll of ink ribbon wound on the feed reel and/or the winding reel so as to control the position of the second gear in the shaft via the driving means.

7. A printer apparatus according to Claim 5, further comprising:

a third gear having a predetermined rotational load and being rotatably arranged so as to mesh the second gear; and

fixing means for fixing the first gear so that it does not rotate, the fixing means being switchable between the fixing and releasing the first gear, and

wherein the controlling means switches the load torque

to be generated in the feed reel so as to drive the fixing means according to demand.

8. A printer apparatus according to Claim 5, wherein the second torque-generating means comprises:

a shaft which is rotatably pivotably mounted and which has a screw thread formed on the circumferential surface thereof;

a first gear rotatably fitted to the shaft;

first and second sandwiching members fitted to the shaft so as to sandwich the first gear therebetween and to rotate integrally with the shaft;

a second gear rotatably screwed on the shaft;

a spring arranged between the second gear and one of the first and second sandwiching members opposing the second gear;

first driving means for rotationally driving the first gear; and

second driving means for rotationally driving the second gear relative to the shaft, and

wherein the controlling means generates the rotational torque in the second torque-generating means in accordance with the diameter of the roll of ink ribbon wound on the feed reel and/or the winding reel so as to control the position of the second gear in the shaft via the second

driving means.